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The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Management
Lovett Saltonstall Building, Government Center
100 Cambridge Street, Boston 02202

RICHARD E. KENDALL
COMMISSIONER

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M E M O R A N D U M

TO: Anne Aylward, James Baecker, Eugenie Beal, Robert Burke, Dan Fenn, Joseph Ignazio, William Lawless, William Meehan, James Miller, Nan Robinson, John Stewart, Robert Wood

FROM: Richard E. Kendall, Commissioner

DATE: June 2, 1977

I am very happy to forward to you a copy of the Report on Water Resource Improvements at Columbia Point, Boston, Massachusetts, which was prepared by the Army Corps of Engineers as a result of a meeting held here at the Department of Environmental Management last fall.

As indicated in my letter to Colonel Garver of the Army Corps, a copy of which is attached, I think the report is a very good one which contains some very promising suggestions and recommendations. I am hopeful that the report will provide further impetus to the ongoing planning efforts for the area and that as a result of this preliminary study a recommendation will be made for further involvement by the Army Corps.

REK/MA/phg
Enc.

Columbia Pt.
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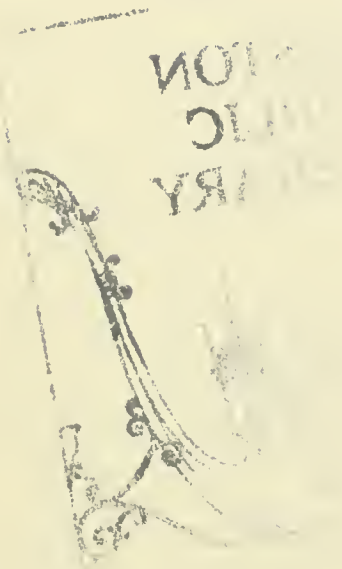

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Executive Office of Environmental Affairs
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100 Cambridge Street, Boston 02202

CHARD E. KENDALL
COMMISSIONER

June 2, 1977

John P. Chandler
Colonel, Corps of Engineers
Division Engineer
Department of the Army
424 Trapelo Road
Waltham, Massachusetts 02154

Dear Col. Chandler:

I was very pleased to learn of the efforts by the Corps to provide some guidance with respect to developing the water oriented potential of Columbia Point and to receive copies of the Report on Water Resource Improvements at Columbia Point, Boston, Massachusetts. I think its a very good study and I am delighted to forward it to the participants in the Columbia Point meeting which was held at the Department of Environmental Management's Offices.

As you are probably aware, the Boston Redevelopment Authority is currently actively engaged in seeking additional funds for redevelopment of the Columbia Point area, including water front improvements. It is my understanding that the Authority is quite optimistic about receiving such funds in the not too distant future and, hence, receipt of the Corps report is indeed timely. The suggestions and recommendations included in the report will provide an important basis for their planning efforts and, hopefully a recommendation for further involvement by the Corps in these efforts will be made.

Again, my thanks to you, Richard Goehlert, and the other members of your staff responsible for the preparation of the report. I will be anxious to keep in touch with all of the parties involved in this important redevelopement effort and hope very much that some further progress will be achieved before too long.

Sincerely,

Richard E. Kendall

Richard E. Kendall
Commissioner

REK/MA/phg

5/77

REPORT ON WATER RESOURCE IMPROVEMENTS AT COLUMBIA POINT BOSTON, MASSACHUSETTS

Prepared by:

New England Division

Corps of Engineers

424 Trapelo Road

Waltham, MA 02154

SYLLABUS

The purpose of this preliminary examination was to investigate the water resource development problems of Columbia Point as defined by the several public and private agencies which have direct interest in the future development of the area. The problems include inadequate water depths for navigation in Savin Hill Cove and Old Harbor and insufficient beach area.

The navigation problem in Savin Hill Cove can be alleviated by dredging a channel through the shallow areas. Because the improvement would serve a single entity, it would not be eligible for Federal participation under existing Corps authorities. It is recommended that the Division of Waterways of the Massachusetts Department of Environmental Quality Engineering be contacted for their possible involvement at Savin Hill Cove.

The navigation problem in Old Harbor might be resolved by dredging a channel from Dorchester Bay to the entrance to the marina. The examination indicates that a channel appears to be justifiable and should be studied in detail, leading to possible authorization as a Federal navigation project.

The development of beaches at the Point appears to be both feasible and desirable. However, direct Corps participation in this improvement is not within existing Corps authorities, as there is no historical evidence

of shoreline erosion or of backshore flooding. In fact, the Point is filled land and not subject to flooding. Section 55, Public Law 93-251 (the Water Resources Act of 1974) does authorize the Corps to provide broad type technical assistance on beach erosion and navigation problems.

Pamphlets are attached to this report which explain the two procedures in obtaining authority for a navigation study. A study to determine the need and justification for improvement of Old Harbor, would best be accomplished under the small navigation project program of Section 107 of the 1960 River and Harbor Act, as amended.

COLUMBIA POINT

BOSTON, MASSACHUSETTS

INTRODUCTION

This is a report of preliminary nature by the New England Division, Corps of Engineers,on the feasibility of providing Federal navigation and beach erosion control improvements along the shores of the Columbia Point complex. It is made as a result of a discussion held among officials of various State agencies and private interests on 9 September 1976 at the office of the Department of Environmental Management, 100 Cambridge Street, Boston, Massachusetts. Acknowledgement of the separate and distinct desires expressed by local interests has required individual feasibility assessments, geographically around Columbia Point. A common purpose among local interests is the development and preservation of water oriented activities compatible with each other and the purposes being served.

Statements, calculations, evaluations and recommendations provided herein, are based on information, and development plans and maps furnished by local interests. The preliminary nature of the information entailed many subjective judgements to be made, using acquired knowledge of existing navigation and shore protection improvement projects. The areas discussed are Savin Hill Cove and Old Harbor. The environmental and engineering aspects discussed are primarily in connection with Old Harbor but many subjects are applicable to the Savin Hill Cove area.

Recommendations for action or further study are interspersed throughout the report as subject matter requires.

SAVIN HILL COVE

The Savin Hill Cove area has two water users, the University of Massachusetts and the Savin Hill Yacht Club, and both have potential to expand in the future if some problems can be solved. The major problem is lack of adequate water depths for boat access and anchorage. Recent National Ocean Survey coast charts (see inclosed map section) show depths of water ranging from 5 to 19 feet, mean low water datum, in one area. However, the map also shows that a large portion of the cove consists of mud flats. A site visit was made with an official of U/Mass who explained that in addition to the shoals shown on the chart, a large bar or shoal exists in the cove. This bar or shoal is indicated on the coast chart as water. The bar significantly hampers the navigation of even the smaller boats at low tide to and from the University dock. He also explained that during summer months some of the boats of the yacht club are forced to anchor in areas where the boats are high and dry at low tide. Thus, while the area is well protected and well suited for use as a boat anchorage, improvements appear to be needed to enhance the boating activity of U/Mass and private boat owners. These improvements include the dredging of a channel to create safe access to U/Mass and the removal of some of the mud flats to create additional anchorage.

Possible Corps involvement in any improvements at Savin Hill Cove seems remote. While the Corps does have authority to improve waterways for recreational and commercial navigation, several criteria must be met. A project must be justified economically, i.e., a benefit to cost ratio better than 1.0 must result, and a project must benefit more than one user. Another condition which must be met by local interests is that a required public landing providing fuel and potable water must be open to all on equal terms. Costs and benefits were not investigated for an improvement at Savin Hill Cove because it was determined that there would be only one beneficiary, thus precluding Federal participation. It is suggested that the Division of Waterways of the Massachusetts Department of Environmental Quality Engineering be contacted for possible involvement in Savin Hill Cove. It is also possible that a public boat ramp could be constructed in the cove. This too would be a State responsibility and could be done through the State Public Access Board. It is understood, however, that a conflict of land ownership exists which must be resolved before planning for the above improvements can progress.

OLD HARBOR

Old Harbor, with proposed developments by the Boston Redevelopment Agency, presents a more complex problem than Savin Hill Cove. While the Cove is well protected, Old Harbor is exposed to significant waves during easterly storms. The size, shape, meteorological environment and hydraulic characteristics of the body of navigable water to which access by boat or shoreline improvements are to be provided, must be considered in

detail. Navigation channels must be safe for water craft to use under most winds and waves. Shore protection structures must be designed for the most frequent, significant conditions. The following paragraphs assess some of the more important factors in design analyses:

a. Winds. Historically the area north of Cape Cod is affected more by winter storms known as "northeasters" than by hurricanes or storms occurring during the summer. While most boating use is during the summer, most of the design criteria are based on winter conditions when considering wind. Winds frequently experienced during summer months average 15-20 miles per hour. Maximum winds in the area, occurring mainly in fall and winter months, can reach 80 to 90 mph but are sustained for only short periods of time. Wind speeds used for development of a wave spectrum in Dorchester Bay were chosen at 40, 50 and 60 mph.

b. Waves. Several methods were used to obtain a range of wave heights predicated on wind speeds, fetch of water, depth of water and wind duration. Also, using information provided by U/Mass and the Department of Environmental Management, wave sizes were obtained by regression of formulae used to size stone for shore protection. Based on these methods a range of wave heights was obtained from two feet to a maximum of six feet. Because of the surrounding land mass, islands, and other bathymetric features, the maximum wave height of six feet would

be attained only rarely and occur only at points fully exposed in Dorchester Bay such as the Kennedy Library site. Therefore, based on judgement and inspection of the site (which experienced a major storm in February 1976) a significant wave height of four feet was selected for design purposes. This wave height is appropriate for general design use in Dorcester Bay. Savin Hill Cove is well protected by Columbia Point and would experience waves of one to two feet. Old Harbor near Carson Beach, would also have lesser waves. The foregoing is not meant to replace a thorough analysis of the problem using specific storm and hindcast wave data.

c. Tides. The mean tide range in Boston Harbor is 9.5 feet. The spring tide (which occurs at or near the the time of new or full moon, and which rises highest and falls lowest from the mean sea level) is 11.0 feet. The highest tide occurring in Boston was 12.1 feet (mlw base). The tide range at Boston would suggest the use of floating docks and walkways in the marina complexes rather than fixed structures. This is usually advisable where the tide range is more than 5 feet. The cost of a floating system is generally more than a fixed system but the difficulty in keeping boats properly tied often justifies the choice of a floating system. A successful floating system will have a combination of floating units and a fixed system. In the case of a passenger ferry dock, a floating system or fixed pier can be used.

d. Ice. Sheet ice can cause damage to a small craft harbor. The best and most frequently used precaution against ice damage is to remove boats and slips from the water. This requires storage space and equipment to remove the units. Ice can also block navigation. If the facility is planned for year round use, provisions for ice breaking or prevention of ice formation must be made. Probably the way to obtain information on ice buildup in Old Harbor would be to talk to existing yacht clubs as to their past problems, particularly in view of the winter of 1976-77. A marina, as proposed, would probably be subject to ice problems. If the basin perimeter slopes were revetted, as shown by BRA plans, the rise and fall of tide in conjunction with the slope would help to break up ice; but ice can erode revetted slopes and dislodge the stones, thus adding maintenance problems and costs. As to the beaches, no damage is expected from ice formation.

e. Fog. Reduced visibility caused by fog can present a serious navigational problem. For this reason, channels and main fairways should be as straight as possible with few turns.

f. Water Quality. Water quality is particularly important near beaches especially in warmer months when biological processes are accelerated. Successful control of water quality is usually dependent on periodic exchanges of marina water with the adjacent main water body. A significant factor in water quality control in any marina is the elimination of the direct sources of pollution. These sources include local rain-

fall runoff, flushing of the sanitary facilities of boats within the marina, inadequate control of boat bilges and dumping of garbage or trash in the water. Rules and/or regulations may prevent these sources but consideration should be given to the provision of pump-out facilities.

Using plans developed by BRA, the navigation and beach aspects of Old Harbor were analyzed. Some degree of protection is provided from storm waves approaching from the north and north-northeast. However, the east and northeast are open to incoming storm waves which could cause loss of beach sand and impair navigation. Following are general comments concerning beach development:

a. The proposed beaches for Old Harbor could be used as sun bathing beaches, providing for limited swimming at the time of high to mid-tides. At low water, the sand placed in the surf zone and dispersed by the waves would not provide enough cover over the layer of silt to allow enjoyable swimming. To provide for swimming at low tide, a large amount of material would have to be removed offshore of the beaches. This would create a swimming hole and rapid filling in of the hole by silt not removed from the adjacent areas might result.

b. The beach profile as shown on the BRA plans should be modified to provide a level beach berm, thereby reducing the wave runup and keeping the mean high water line seaward of the shore. A berm of 100 feet and a 15:1 slope seaward should be considered.

c. Unless the proposed end structures (terminal groins) are to be used for purposes other than the containment of the sand(e.g., fishing and walking), they could be modified and shortened, thus reducing the cost of the structures. Periodic nourishment of the beach would be necessary, but the amount of sand needed could only be determined through a thorough wave analysis.

d. The students, housing residents and visitors will provide adequate usage of the beach area. A picnic facility might be considered for this area.

e. The beach proposal meets some of the Corps criteria for involvement. It appears to be feasible and the need and demand can be expected to grow in the future due to larger student enrollment and future housing additions. Also, it would be a public beach. However, under existing Corps authorities for beach erosion the Corps cannot participate directly in the study or possible construction of the beaches at this time. Existing authorities only allow Corps studies and Federal projects where there is historical evidence of shoreline erosion or in certain cases to prevent back shore flooding. The Point is actually filled land and is not subject to flooding. However, if documentation can be found of shoreline erosion, the Corps would be glad to examine the data. One limited way of obtaining Corps participation is under authority of Section 55, Public Law 93-251 (the Water Resources Act of 1974, 7 March 1974). Under this law the Corps can provide technical and engineering assistance to non-

Federal public interests in developing structural and non-structural methods of preventing damages attributable to shore and streambank erosion. Assistance would include review of problems, providing pertinent technical data, information and reports, advice on methods to prevent erosion, review of plans and specifications prepared by non-Federal interests, and inspection upon completion of construction. Such assistance would not include surveys, preparation of plans and specifications or supervision of construction.

The investigation of the feasibility of constructing a new small-craft harbor is usually reached through consideration of the more favorable aspects of the proposed development. Unless the need was fairly obvious, the economic potential attractive, or the overall assessment of the harbor as an integral and needed part of a larger master plan, the project would never have reached the first planning stage.

At Columbia Point, the marina development is proposed in conjunction with the development of new housing units. Therefore, it is uncertain if the economic potential of the marina is of prime importance. However, when it is not, other tangible or intangible items must be significant. The marinas are proposed for small boats and this alone sets the scale for many of the design features. Boat lengths will likely range from 15 to 35 feet. Also, the type of boat will vary from simple outboards and day-sailers to cabin cruisers and auxiliary-powered sailboats. A more definite statement cannot be made without sufficient market analyses and determination of the resident population proposed or desired in the new housing

units. It can be said with emphasis, however, that mooring facilities are in short supply in the Boston area and that boat-oriented housing complexes are almost unavailable.

For most recreational craft, a channel six feet deep below mean low water is adequate. This also applies generally to the berth areas in marinas but these depths can be less. The BRA proposal shows a depth of 10 feet mlw. This added depth is probably unnecessary for pleasure boats and adds excess costs. However, if ferry service were provided using the same channel, the six foot depth would not be adequate. Existing year round passenger ferries in Boston have loaded drafts of 10.0 and 6.5 feet. There are several summer excursion services with boats that have drafts under six feet. For the vessels of 6.5 foot draft a channel depth of 9 feet would be the minimum required for full operation. For the deeper craft, a depth of 13 feet would be needed. Thus, added channel depth would be required just for ferries. (A possible alternative is to use ferries only at mid to high tide levels or provide ferries which can use a 6-foot deep channel.) An additional requirement would be a turning basin at the ferry dock. This would require an area of at least one and one-half times the length of the ferry. A channel 100 feet wide would be sufficient.

Preliminary wave analyses show that protection of the marinas would be necessary. If only summer use were expected, a floating breakwater could be used with removal in winter. A floating breakwater is less expensive

than permanent structures. However, without winter protection, dock facilities may experience damage thus increasing annual maintenance. If breakwaters are to be used as walkways and fishing platforms in addition to protection for boats, a permanent breakwater appears to be the best choice. The height of the breakwaters would have to be in the range of 15 to 20 feet above mean low water depending on the degree of protection desired.

The capacity of the two marinas was studied using the dimensions on the BRA plans. A rule of thumb of 15 to 20 boats per acre of navigable water area was used for estimating slip moorage. Thus, the capacity of the east basin was found to be 40 boats and capacity of the west basin to be 120 boats. A layout of slips was also done for boats ranging from 20 to 40 feet in length, with emphasis placed on boat lengths of 20 to 30 feet. Capacity of the east basin was thus computed at 52 boats and of the west basin at 160 boats. A change in the size of vessels using the facility and/or the geometric layout of slips, could change the above capacities.

Plans call for 750 to 850 housing units around the east basin. The housing proposed near the west basin would be about 400 units of the apartment type and could result in 50 to 100 boat owners. Thus, the estimated marina capacity of 210 boats is probably on the lower limit of what is needed; an additional 100 spaces might easily be required. It is emphasized that the number of units in a development is only one factor in deter-

ming the potential demand. The actual boat count will also depend on facilities available, marketing of the housing, overall quality of the complex, cost of moorage and other variables. Growth of boating in general and the availability of moorage at the site may also induce boat ownership by residents. Visits to the library by boats from outside the area may be induced if moorage is available. However, it doesn't appear that significant boating visits would be realized unless park type facilities are provided to allow opportunities for half or full day enjoyment.

The two basins viewed separately have several disadvantages. The smaller east basin (52 boats) does not appear to be warranted when considering the costs. BRA estimates excavation and protective measures at about $700,000. Add slip costs of about $100,000 ($2,000/slip) and the total cost for 52 boats is $800,000. This represents an investment of over $15,000 per slip. This investment does not seem justified. (Note: BRA estimate is for 10-foot deep basin.) The west basin, while of larger capacity, is somewhat remote from the larger number of housing units and would thus require more land for parking, etc. Also, the proposed community center at the old pump house would not serve the west basin very effectively. No cost estimate is available at the present time for the west basin.

There is limited information available concerning marina investment and return and some of this information is either outdated or obsolete due to changes in laws and codes. A study by the State of Rhode Island

indicates that small marinas (less than 200 boats) report the least profitability (0-5%) and are often seeking to transform their land holdings into other income producing uses such as residential development. In some cases a small marina is subordinate to other activities such as retail, hotel or restaurant use and is considered as an amenity in the total project operation. Larger marinas (200 boats plus)are often combined with other uses.

At Columbia Point, it appears to be advantageous to combine the marinas into one site thus avoiding duplication of attendant facilities. Another possibility is to enlarge the east basin significantly to serve the housing immediately nearby then the west basin would be available to non-residents of the Point. However, as noted previously, the feasibility of the small basin may not be important if it is considered primarily as an amenity. Viewed in this perspective any losses incurred would be made up from other revenue sources.

While development costs are best when specific, "rule of thumb" costs are sufficient for this report. Contact with industry sources and published reports indicate the following costs can be used for a floating marina system. These costs do not include dredging or development costs; just docks, piers, floats, walkways and piling. A 15% contingency should be added for planning purposes.

Slip Length	Cost
20'	$1,350
30'	$1,500
40'	$3,000

The above estimates are for slips without water or electricity. To include these costs add $1,000 per slip for electricity and $150 for water. (The cost of electricity is highly variable, subject to the number of boats, type of boat and length of dock and thus the figure quoted is conservative.)

The issue of possible ferry use at the Point can only be resolved by detailed market analysis, usage studies, and developmental cost studies. This report does not address these requirements in detail but rather discusses pertinent factors in general terms.

First, existing ferries in Boston, with exception of some seasonal ferries, require a deeper channel than do the recreational boats. This means expending monies for channel depth beyond 6 feet, which will be used only by a ferry. An alternative would be to use a ferry which can operate on a six-foot channel. Second, in considering passenger usage, there appears to be three potential user groups: U Mass students, Library visitors and future residents. For U Mass students a deciding factor may be the cost of transportation compared to the existing mass transit costs. The present fee of 25 to 50 cents for subway costs for most of the metropolitan area is very inexpensive. No fee has been established

for a possible ferry commute to Columbia Point, but the existing fee from Hull is $11 for 10 tickets or $1.25 per single ride and 75¢ for students. If we assume a similar fee for transportation to Columbia Point and then add on the subway fee that most student users would have to pay to get to the departure point in Boston, it is not likely that this mode of transportation would be attractive. Maybe a subsidy for student use could make this more attractive.

Other factors regarding ferry transportation that need to be examined include the periods of maximum use and capacity. The existing ferries in Boston carry 111 or 259 passengers. With total enrollment projected at 10,000 students, perhaps 15% would use the ferry. These 1500 potential riders, using existing ferries, would require a minimum of six ferry trips and two to three hours of time each morning. Thus, if most students could allow themselves only one hour, there would be an insufficent number of passengers to justify ferry use. Therefore, travel via the alternate subway method would be more attractive.

The use of ferries in conjunction with harbor cruises and visits to the library is more promising and it appears to merit further study. The expected number of visitors to the library is between 250,000 and one million per year at the new site with the majority of visits anticipated during the summer months. Water access to the site would provide a convenient alternative to private automobile access from downtown Boston. An added possibility is water access to the Constitution and Bunker Hill Park in conjunction with the Freedom Trail. Much more study is needed to determine the merits of such a program.

The third possible use of a ferry would be for residents at the existing and proposed housing. The resident population could induce sufficient justification for commuting. However, timing of departures, ticket prices and location of final destination would affect the ultimate usage. Also the price of passage compared to the cost of mass transit would be important, as in the U/Mass analysis.

A ferry landing would not have to be an elaborate structure, a simple vertical bulkhead would be sufficient. Also, a building to provide protection from weather and some comfort while waiting appears to be necessary.

A navigation channel from deep water in Dorchester Bay to both marina sites was analyzed. For a channel 100 feet wide and 6 feet deep at mlw, approximately 118,000 cubic yards of material needs to be dredged. Because land disposal areas are not readily apparent at this time, the method of disposal of materials at sea was used to estimate construction costs. To construct the channels would cost $557,000 say $560,000. This estimate includes a 15% surcharge for engineering, design, supervision and administration. An estimate of benefits based on a new fleet of 162 boats was prepared using standard Corps policy. Annual benefits would amount to $327,000. Costs of construction amortized at a 6-3/8% interest rate over a 50-year project life are $45,000. The resultant benefit to cost ratio is 7.3. (The benefits should not be mistaken for the rate of return for operation of a marina.)

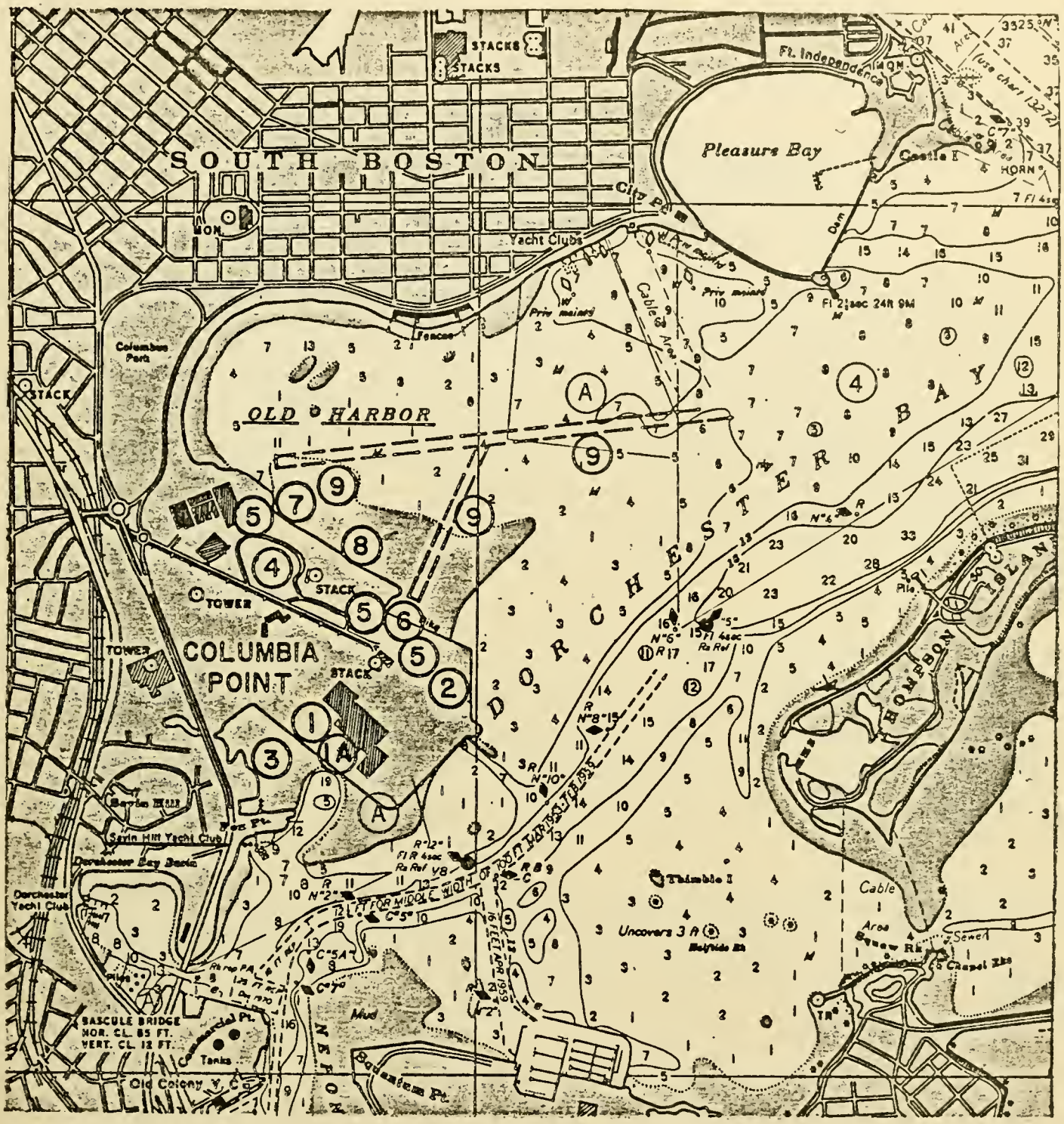
The Corps of Engineers could study the feasibility of providing a Federal navigation project in Old Harbor. A preliminary benefits analysis shows justification for a six-foot deep channel. A deeper channel for use by a ferry appears to be in a single user category and thus not eligible for Corps participation. The laws governing development of navigation channels prohibit the expenditures of Federal funds for a navigation improvement which would benefit a single company or single private interest such as the ferry service. If a Federal project were constructed, non-Federal interests would be required to pay 50% of the cost of construction of the channel, and provide a public landing open to all on equal terms with adequate provision for the sale of motor fuel, lubricants and potable water. Using the costs previously computed, non-Federal interests would pay one half of $560,000 or $280,000.

The scope of the project indicates the best vehicle for a detailed study of a possible navigation improvement is under Section 107 of the 1960 River and Harbor Act. This Act authorizes the Chief of Engineers to develop and construct small navigation projects which do not need to be specifically authorized by Congress. The limit of Federal monetary participation is $2 million under this authority. Two information pamphlets are inclosed which further explain the methods of obtaining a detailed study.

The intent of this brief examination report has been to provide some guidance for developing the waterfront of Columbia Point. The potential for development of Columbia Point for recreational uses, appears to be good. The high demand for recreational boating and shoreline access will

increase in the future. The developments discussed in this paper appear feasible from the point of view of engineering practicability. Development of navigation channels in Old Harbor is within the authority of the Corps of Engineers and appears economically feasible. However, only a detailed study could determine the optimum plan for improvements and the specific costs, benefits and impacts.

2 Incls
As stated



REFERENCE POINTS

1. UMASS - BOSTON
1A. UMASS BOAT DOCK
2. KENNEDY LIBRARY
3. SAVIN HILL COVE
4. COLUMBIA POINT HOUSING
5. POSSIBLE HOUSING
6. EAST MARINA
7. WEST MARINA
8. BEACH
9. POSSIBLE FEDERAL CHANNEL
   100' Wide x 6' Deep

INFORMATION SHEET

CORPS OF ENGINEERS PROGRAM FOR CONSTRUCTION OF SMALL NAVIGATION PROJECTS UNDER THE AUTHORITY OF SECTION 107 OF THE 1960 RIVER AND HARBOR ACT, AS AMENDED

AUTHORITY AND PROJECT SCOPE: Section 107 of the River and Harbor Act enacted 14 July 1960 provides authority for the Chief of Engineers to develop and construct small navigation projects that have not already been specifically authorized by Congress. A project is adopted for construction under Section 107 only after full, detailed investigation and study clearly show the engineering feasibility; economic justification; and the environmental, social, and aesthetic acceptance of the project. Each project under Section 107 must be complete, justified, and limited to a Federal cost not to exceed $2,000,000 (including costs for all investigations, planning, design, and supervision involved in development and construction of the project). A project planned and constructed under Section 107 is the same complete navigation project that would be provided for the locality under regular authorization procedures and no additional work should be needed for the project to operate in an effective and successful manner.

No portion of a project already specifically authorized by Congress can be financed or constructed under this authority. Consideration cannot be given to the use of the Section 107 authority to construct a substitute for or modification of an uncompleted specifically authorized project. However, this restriction does not apply to a small project that would redevelop, renovate, or modify an authorized project already completed to the full extent specified and permitted by the previous authorization and where the proposed work can be further defined as a new, small, complete-within-itself project not specifically authorized by Congress.

DIVISION OF WORK RESPONSIBILITY: The Federal project may only provide general navigation facilities, which can include a safe entrance channel protected by breakwaters or jetties if needed; protected anchorage basin; protected turning basin; and a major access channel leading to the anchorage basin or locally provided berthing area. Shorefront facilities such as interior access channels, berths, piers, alongshore wharves, bulkheads, floats, launching ramps, parking areas, access roads and mooring equipment, are entirely a local responsibility and are constructed and maintained at non-Federal expense. Interior access channels and berths are to be provided and maintained at depths corresponding with the depths provided in related Federal project areas. General navigation facilities constructed under this program, which result in benefits to recreational boating solely, will require local interests to assume one-half of the first cost of construction (these benefits are termed local benefits). In the case where benefits will accrue to commercial users solely, such as a commercial fishing fleet, the project cost is a Federal responsibility (these

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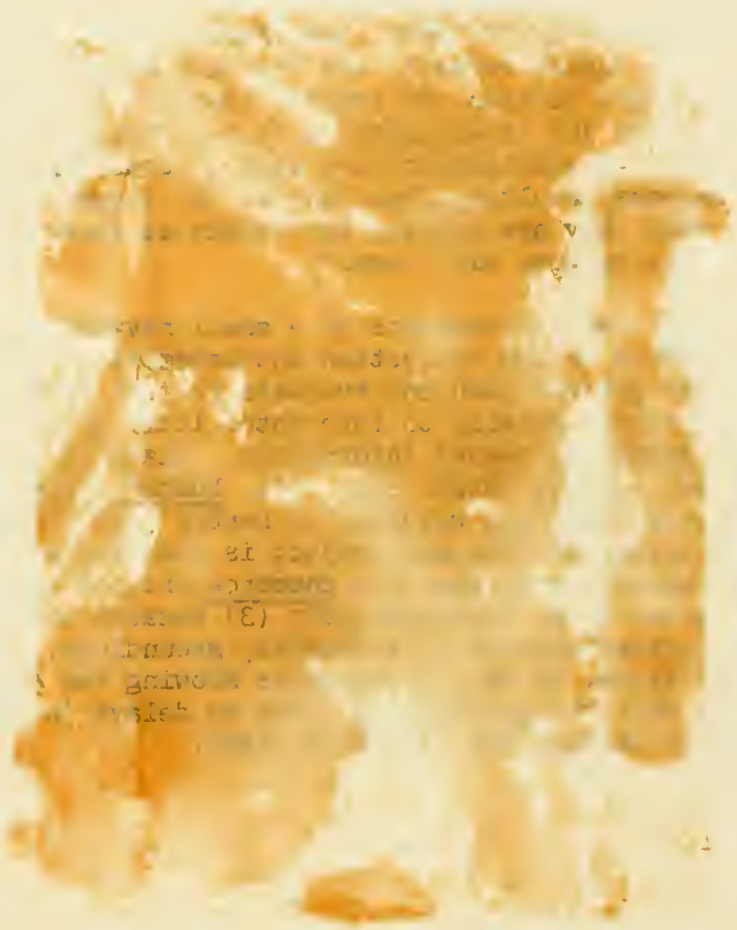
(7) Assume full responsibility for all project costs in excess of the Federal cost limitation of $2,000,000.

(8) Establish regulations prohibiting of untreated sewage, garbage, and other pollutants in the waters of the harbor users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State and local authorities responsible for pollution prevention and control.

HOW TO REQUEST A FEDERAL NAVIGATION IMPROVEMENT UNDER Section 107: An investigation of a prospective small project under Section 107 may be initiated after receipt of a formal request from a prospective sponsoring agency fully empowered under State law to provide all required local cooperation. This request and any further inquiries concerning a small navigation project should be made directly to: DIVISION ENGINEER, NEW ENGLAND DIVISION, CORPS OF ENGINEERS, DEPARTMENT OF THE ARMY, 424 TRAPELO ROAD, WALTHAM, MASS., 02154. Upon receipt of a formal request, the Division Engineer will initiate action to have the prospective Section 107 project location placed on a backlog list of prospective Section 107 investigations to be considered when sufficient funds become available. Investigations are made in order that the requests are received. Projects resulting from Section 107 investigations are constructed in the order that they are adopted as rapidly as funds appropriated by Congress for this purpose will permit.

LOCAL ASSISTANCE: Local proponents of a small navigation project can provide valuable assistance in the collection and assembling of certain data needed to formulate the project plan and evaluate project benefits. The Division Engineer will provide details to interested local groups concerning how they can assist in gathering needed information. Examples of useful information that local groups can readily obtain are: (1) Number, type, size and draft of vessels presently using the waterway or harbor under consideration and reasonably prospective if proposed project is constructed; (2) Amount of existing and reasonably prospective commerce shipped or received via the waterway or harbor under consdieration; (3) Hazards and difficulties to navigation, with factual history of accidents, groundings, loss or damage to vessels, boats and facilities, as well as examples showing the extent that existing conditions restrict full navigational use such as delays in entering or leaving the harbor caused by waiting for favorable tides.